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Secretary: Robert E. Kennedy, assistant secretary of the American Foundrymen's Association, Urbana, Illinois.

W. R. Bean, president of the American Foundrymen's Association, Naugatuck, Conn.

Henry B. Hanley, metallurgist and chemist, New London, Conn.

Jesse L. Jones, metallurgist of the Westinghouse Electric and Manufacturing Co., E. Pittsburgh, Pa.

Professor Henry Ries, Department of Geology, Cornell University, Ithaca, New York.

Dr. Bradley Stoughton, consulting engineer, New York City.

Dr. George K. Burgess, chief of the Division of Metallurgy, Bureau of Standards, Washington, D. C.

The committee has thirty-five members, representing the many interests in the use of molding sand.

At a meeting of the executive committee on November 26, in the office of Division of Engineering, Engineering Societies Building, New York City, three subcommittees were appointed to deal (1) with the formulation of standard tests for determining the working properties of molding sand, (2) reclamation of molding sands and greater use of old sands and (3) methods of manufacturing synthetic sands. A meeting of the main committee in the Engineering Societies Building, New York, was planned for December 9, to lay out a comprehensive program of research which will include the assigning of the various problems to appropriate laboratories and industrial plants. Some field work will be necessary in connection with these investigations.

The cooperation of men having like interests in Canada and England is assured and invitations have been extended to France and Belgium.

ALFRED D. FLINN

CHAIRMAN OF THE DIVISION OF ENGINEERING,  
NATIONAL RESEARCH COUNCIL

#### THE BAYARD DOMINICK MARQUESAN EXPEDITION

THE Bayard Dominick Marquesan Expedition for anthropological research has recently returned after fifteen months in Eastern Cen-

tral Polynesia. The members of the expedition were Dr. E. S. Handy, ethnologist, and Mrs. Handy; and Mr. Ralph Linton, archeologist, members of the staff of the Bernice Pauahi Bishop Museum of Polynesian Ethnology and Natural History, of Honolulu, T. H. Nine months were devoted to intensive work in the Marquesan Islands. In addition a considerable amount of ethnological and archeological data were obtained in Tahiti.

The ethnological work of the expedition in the Marquesas was approached with the point of view of reconstructing as near an approach as it is now possible to make to a complete and accurate picture of ancient Marquesan culture. In spite of the fact that the population has been reduced to a very low figure as a result of a hundred years of European contact, and that the ancient culture has been subject to the disintegrating influences of missionary teaching and commercial exploitation for eighty years, the results of this survey are reported to be most satisfactory and illuminating with regard to the relationship of the Marquesan culture to the cultures of other Polynesian and extra-Polynesian peoples.

The archeological survey was accomplished with similar success. Its results will be most illuminating to the body of serious students whose attention is turned on the ethnographic problems of the Pacific.

For the physical survey, which rounded out the anthropological investigations as they had originally been planned, a series of two hundred measurements of full-blooded and mixed Marquesans was obtained, accompanied by observations, hair samples and photographs of every individual. Mr. Louis R. Sullivan, of the American Museum of Natural History, is in charge of the compilation and publication of these anthropometric and somatological data. An early presentation of the results of these researches is planned by the Bishop Museum.

It is felt that at last the inhabitants of the Marquesas and their culture have been, so to speak, charted on the scientific map of the world. The work of this expedition represents the first attempt on the part of the scientific

world to make a thorough and organized anthropological study of this interesting and little-known group.

H. E. G.

#### LECTURES BY PROFESSOR LORENTZ AT THE CALIFORNIA INSTITUTE OF TECHNOLOGY

THE following is the provisional outline of the extended course of lectures on "Light and matter" to be delivered by Professor H. A. Lorentz, of Haarlem, Holland, during the winter quarter at the California Institute of Technology at Pasadena:

Older theories of light. Maxwell's theory. Maxwell's equations.  
 Propagation of light in ponderable bodies.  
 Huygen's principle.  
 Interference phenomena. Professor Michelson's methods.  
 Propagation in a dispersive medium.  
 Group velocity.  
 Which is the velocity that is determined by the measurements?  
 Considerations on (special) relativity.  
 Fresnel's coefficient.  
 Momentum, energy and mass.  
 General considerations on the constitution of electrons, atoms and molecules.  
 Models of the atom. Thomson, Rutherford, Bohr.  
 Theory of quanta.  
 Parson's electron. Lewis's and Langmuir's atom.  
 Bohr's theory.  
 Principles of correspondence.  
 Atoms in stationary states not radiating.  
 Emission of light. Long trains of waves. Interference with high differences of phase. Structure of spectral lines. Broadening by Doppler effect and other causes.  
 Scattering of light by molecules.  
 Dispersion of light.  
 Anomalous dispersion. Application to solar atmosphere.  
 Gravitation. Propagation and emission of light in a gravitational field.  
 Constitution of solid bodies. Atoms held together by electric forces?  
 Heat motion in crystals.  
 Magnetism. Theories of diamagnetism and paramagnetism.  
 Einstein-effect.  
 Magnetization by rotation.  
 Quantum theory of the Zeeman effect.

Inverse Zeeman-effect. Older theory. Phenomena observed in the direction inclined to the lines of force. Application to the sun's magnetic field.

In addition to the Lorentz lectures, which will be delivered four times a week from January 4 to March 10, Professor Paul Epstein will give a course on "The origin and significance of the quantum theory."

The California Institute of Technology extends a cordial invitation to investigators in physics, and to teachers in universities, colleges and high schools who are able to do so to attend without charge the Lorentz and Epstein lectures, which will be delivered from 4 to 6 P.M. in the main lecture room of the Norman Bridge Laboratory of Physics.

It is probable that before his return to Holland in April Professor Lorentz will spend a week at the University of Chicago and also at several other universities of the West and Middle West.

#### THE SECRETARYSHIP OF SIGMA XI

PROFESSOR HENRY B. WARD, of the University of Illinois, who has been secretary of Sigma Xi since 1904 and has been in large measure responsible for the national development of the Society, writes in the *Sigma Xi Quarterly*:

Two years ago when the quarter-century of service terminated, I made an especially urgent appeal that the work be passed to someone else. Just at that time, however, the society was emerging from the chaotic condition in which all organizations found themselves after the war, and a new project had just been started which bade fair to arouse interest and develop stronger support than any new plan which the society had developed since the earliest years of its history. It was clear to the president and to the members of the fellowship committee, who were intensely interested in this new movement, that a new man could not possibly take up the work of the secretary's office without embarrassing very seriously, and delaying or perhaps fatally injuring the campaign for the establishment of Sigma Xi fellowships. Accordingly, I reluctantly consented to carry the work for one more term, with the positive understanding that my resignation, to take effect in December, 1921, would be final. Under these circumstances, I may be par-